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ABSTRACT

This booklet examines how the concept of the community health worker (a person chosen from the community and trained to function in the community in close relationship with the health care system) is being practiced in various developing countries. It also identifies the major problems and indicates how the contribution of the community health worker to the provision of primary health care can be made more effective in the future. It is based on a review of literature as well as on unpublished reports of meetings and other generally inaccessible material. The booklet is organized into eight sections, covering these aspects of the community health worker concept: tasks and functions, selection and recruitment, training, remuneration, career prospects, attrition rates, support services, and concluding observations. Drawing examples from 46 countries, the booklet not only explains how these areas are handled in various countries but also makes recommendations about how the community health programs work best and how they can be implemented. (KC)

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NATIONAL EXPERIENCE IN THE USE OF COMMUNITY HEALTH WORKERS

A Review of Current Issues and Problems

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PREFACE

Global efforts to bring equity and justice to health care - expressed by WHO as the goal of achieving health for all by the year 2000 - are faced with problems that often appear insoluble. The most intractable are prominent in the least developed countries: how to achieve universal coverage of population with health services on the pitifully scarce resources available, often less than US$ 1 per capita per year; and how to engage the community itself in health and development matters, a task that is at the heart of community self determination and, accordingly, is dependent on community resolve to take a major role in solving its own problems.

The concept of the community health worker (CHW) represents a signal advance in approaches to health care and is a key to dealing with the problems mentioned above. Thus, the CHW has the potential for resolving at least three major impediments to the development of effective primary health care programmes:

- access of the entire population to the basic elements of promotive, preventive, and treatment services;

- the cost of covering an entire population with services by the usual professional and paraprofessional personnel of the health system, which is almost always prohibitive;

- social relationships between health workers and the population, which are often a barrier, but which must be close and trustworthy if the population is to be effectively guided and influenced in health-related and development-related behaviour.

The concept of the CHW is deceptively simple: a person from the community who is trained to function in the community in close relationship with the health care system. It should be noted, however, that the role of the CHW - in title and concept - is unique in the community and in the health care system, because it is common to both: it is a bridge from one to the other. The bridging function involves, on the one hand, being of the community and thereby helping to identify community problems and community people at risk and in need, involving the community in planning how to deal with its problems, and bringing the community into accessibility to health services; and, on the other hand, serving as a channel for bringing health services - preventive, promotive, treatment - to the community, and for bringing health-related information necessary for surveillance, planning, and management to the health services.

Most of the strengths as well as the vulnerabilities of the CHW concept are to be found in this bridging function. It is when the relationship is weak on one side or the other that failures show: inadequate roots in the community result in lack of trust in the CHW and undermine the CHW's influence; inadequate support from the health system results in breaks in the flow of vaccines, drugs, supervision and consultation, which, in turn, compromise the effectiveness of the CHW.

Thus, the networks of relationships and supporting systems on both sides are essential to the effective functioning of the CHW. If the CHW does not function effectively, this is more likely to be due to failures in these relationships than in the more immediate activities of the CHW.

This book appears at an important time in the development of the idea of the CHW. It passes in review the rich variety of recent experiences and current thinking in this field, and it provides extensive examples of how the many functions and characteristics of the CHW are being worked out in different countries, including mistakes as well as successes.

While it is clear that these experiences are not readily transferable from one setting to another - health problems, cultural determinants, population distribution and resources available have too much local specificity for that - experiences in one place can instruct others who must deal with similar problems in very different settings.

This material is presented at one point in time during the evolving story of the CHW, but it also looks beyond the present. It describes the context and functions of the CHW, identifies the major problem areas, points out gaps in currently available knowledge, and, in so doing, begins to set a timetable for the next steps required to deal with this important innovation in health care.

It is important to look ahead to tomorrow's questions in dealing with the CHW. There are several challenges that should claim our particular attention as we seek improvements in the use of the CHW:

- To develop a better understanding of the CHW as an instrument of community development. Health work, in cooperation with other sectors, can be a vehicle for community development more generally, and the CHW is ideally positioned to promote community involvement in development-related activities. The community's sense of dignity and confidence in directing its own affairs is an essential element of development, which the CHW can also promote.

- To strengthen the supportive functions of the health system. The CHW should not be seen simply as another health worker added to the existing staffing complement. Rather, the CHW is the focal point for providing PHC at the community level. The presence of the CHW does not lessen but adds to the burdens of the health system, including requirements for providing training, supervision, supplies (particularly drugs and vaccines supported by an effective cold chain), arrangements for referral, and assistance in developing and maintaining a health information system. It is no exaggeration to say that these supportive functions are essential to the effectiveness of the CHW, yet our knowledge of how these functions can best be developed and applied is still rudimentary.

- To develop effective health information systems for primary health care. The larger purpose of primary health care is to bring equity to the distribution of health services so as to meet the health needs of entire populations. An information system that describes health services provided at the primary health care level, how they are utilized, and the health status of the population including selected risk factors, is essential to that purpose. The information system must be carefully simplified so that CHWs can obtain and record the relevant data and observations, and highly practical so that it will be used for management decisions by the CHWs and supervising health personnel. Such an information system can be an important part of the framework that relates the health care effort to the goal of health for all, and links the work of the CHW to both the needs of the community and the supportive functions of the health system. Here is an example of one of the strong challenges to advanced technology: to have a clear view of the ways in which modern biomedical and public health science can be used to combat the eroding effects of disease and hazards to health, and to recast that technology into simplified yet effective forms that can be applied, as in this case, by CHWs in local settings.

- To formulate a typology of CHWs. While this book analyses the various characteristics and relationships of the CHWs, a need remains to develop descriptions and comparative assessments of the major prototypes of CHWs. Important parameters to be used in doing so might be: population covered by each CHW (varies from a few hundred to a few thousand); whether the CHW is community-based or health-system-based; what the mode of remuneration is; the range of functions (from mainly treatment to mainly preventive); and the nature and range of supportive functions. Such comparative assessments could provide practical guidance to those considering choices among alternative types of CHW.

The CHW concept is an important advance in thinking about health care, particularly in relation to the possibilities of practical progress towards health for all. But it is not an easy concept to apply. The functions of the CHW need to be carefully refined, not in isolation from but in relation to the particular local community circumstances; and the supporting functions and structures available within the community and the health system need to be understood much more thoroughly than is currently the case.

The CHW is both a particular kind of health worker and also a system concept - a system involving a network of functions and relationships that converge on and emanate from the CHW. To see the CHW only as a health worker misses the essential nature of the concept, risks failure because of underestimating the support required, and, most crucially, leads away from its greatest potential - achieving universal coverage in meeting health and development needs.

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INTRODUCTION

The International Conference on Primary Health Care at Alma-Ata in 1978 (35) emphasized the need to exchange information about experiences with community health workers (CHW). Two years later UNICEF and WHO responded to this need by sponsoring a workshop in Kingston, Jamaica, for 13 countries to analyse their country experiences in relation to selected critical issues.[1] That workshop provided some guiding principles for countries to use in the development of CHWs but it also identified many unresolved issues. This book goes further and outlines the current problems and issues of CHW programmes up to 1981; it also identifies the practical solutions that have been applied. By doing this it is hoped that a basis can be provided for implementing the recommendations of the stimulating and provocative Jamaica workshop and of responding to the continuous emergence of new questions and issues on the functioning of CHWs.

The main issues considered in this review, which were also identified at the Jamaica workshop, relate to the tasks and functions of the CHW, his (or her) selection, recruitment and training, his remuneration, career prospects and support services. Important issues that were not covered at the workshop, e.g., attrition rates, are dealt with in this review. Further issues have been identified for consideration by countries.

In discussing the successes and failures of CHW programmes, as many examples as were found relevant have been given to illustrate how countries have approached the problems facing the CHW. It is important to note that although the constraints of CHW programmes are common to most countries, the solutions evolved may be influenced by differing socioeconomic factors and cultural patterns.

The idea was to select as examples programmes that have important lessons to offer. This was naturally limited by the sources available. Information on the issues discussed were obtained from published and unpublished documents, mainly country reports, evaluation reports by WHO and donor agencies and country staff, workshop reports, regional reports, country submissions for the technical discussions at the Thirty-fourth World Health Assembly, and other relevant documentation available at WHO headquarters, as well as discussions with WHO officials involved in the primary health care (PHC) programme.

The examples were selected from 46 countries. However, it is realized that often the example was a project and that its description would not necessarily hold for the whole country nor for long periods of time. The majority of references relate to the period 1975-1980. This fact, and also the subjective nature of the interpretations of many of the documents, will inevitably lead to some statements being criticized as inaccurate or as having the wrong emphasis. The problems of reviewing the utilization of CHWs are recognized but have been diminished wherever possible by cross-referencing and by verification.

Although there are many more countries training and utilizing CHWs, data on some of the programmes were not available for review. Thus, a computer search that was carried out to ascertain the numbers of CHWs trained by countries did not prove very useful.

This book has been organized into eight sections:

1. Tasks and functions
2. Selection and recruitment
3. Training
4. Remuneration
5. Career prospects
6. Attrition rates
7. Support services
8. Concluding observations.

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[1] See under UNICEF/WHO in the "List of unpublished documents consulted".

In each section, a statement of the problems in the area, sometimes using country experiences, is followed by examples of how countries have tried to deal with these problems. Where appropriate, inferences, conclusions, and observations that highlight the important points are shown indented and marked by a vertical line at the end of each section.

This review has been based not only on published material but also on a large number of unpublished documents. These unpublished sources are not referenced in the text and are therefore not included in the list of references. They are, however, listed separately, following the reference list.

It is hoped that this study will prove useful for CHW programmes in the initial stages of inception, or for those programmes that are facing some of the difficulties discussed therein.

1. TASKS AND FUNCTIONS

Tasks

The CHW is expected to perform a wide range of functions, which according to country reports generally include: home visits, environmental sanitation, provision of water supply, first aid and treatment of simple and common ailments, health education, nutrition and surveillance, maternal and child health and family planning activities, communicable diseases control, community development activities, referrals, record-keeping, and collection of data on vital events. These functions have been shaped to a large extent by the Declaration of Alma-Ata, which outlined the eight essential components of primary health care (35). The tasks and functions were discussed in detail at the Jamaica Workshop.

The issue, here, is what functions one CHW can effectively perform considering his level of education, the type and duration of his training, the health needs of the community and the size of the population he is expected to cover.

All CHWs do provide some basic curative care. The extent to which this activity is performed as opposed to promotive and preventive functions varies from country to country. In countries like Botswana, Papua New Guinea, and the Solomon Islands, the CHW does a lot of clinic-based or curative work with less or very little activity in the community and in the area of preventive and promotive health. This may be attributed to the type of training he is given, taking into account the tasks that the health system expects him to perform.

If the CHW is not given the type of training that will enable him to tackle both health and other developmental problems, he will, in the long run, have very little or no impact on the health status and well-being of the community. Improvement in health will be insufficient without improvement in the underlying social and economic conditions. Therefore, a CHW's duties should not be confined to health work, but should relate as much as possible to the many aspects of social and community life that affect a person's well-being.

The extension of the functions of the CHW to cover preventive and promotive activities should not be a difficult problem from the point of view of their acceptablity to the community. The evaluation of the Kavar project in Iran (38a), for instance, has shown that the initiation of preventive and promotive activities is made easier because of the trust that the CHW builds up through effective treatment activities. It has also been found in this same project that the provision of monetary incentives for successful environmental sanitation work encourages the CHW to emphasize this important area of activity.

In some countries, e.g., China (23), Costa Rica (44), Ethiopia, Guatemala (3), Mozambique (43), Nepal (10), Venezuela (19), the tasks of the CHW are mainly preventive and promotional. There is generally a strong emphasis in these countries on health education, nutrition education, surveillance of diseases, environmental sanitation, the provision of potable water and protection of the sources of water supply, and mobilization of the community for community development activities. In Guatemala, the health promoter also works in other spheres, such as agricultural extension and the introduction of fertilizers and new seed. In Venezuela, the health auxiliary stimulates community development activities by collaborating with other community workers, such as teachers, agricultural extension officers, and home demonstrators.

The involvement of the CHW in other developmental activities and their cooperation with community workers, as seen in Venezuela and Guatemala, has not been reported from many other areas. This aspect will be discussed further in the section on intersectoral cooperation (see p. 38).

In countries where the CHW has been emphasizing preventive and promotive activities, however, encouraging results have been reported, particularly in the areas of environmental sanitation, provision and protection of water supply and sources, and health education.

An activity of the CHW that has been neglected, except in China, is occupational health. Since agricultural pursuits are the most important occupational activity in the rural areas of the developing world, where most CHWs operate, it would have been logical to emphasize the health aspects of these. During the technical discussions at the Thirty-fourth World Health Assembly, several delegations stressed the importance of occupational health in relation to primary health care (47).

Team work

It has been realized by many countries that the CHW working alone cannot cover the full range of functions that could be assigned to him and be expected to cater for a population of a thousand or more. The tendency, therefore, is towards the development of "Primary health teams" to share these responsibilities. For example, in Nepal the community health leader is assisted by a Ward Health Committee, whose roles are primarily to provide motivational, organizational, and logistic assistance, including drug resupply to the community health worker. Health education has recently been added to the functions of the volunteers. There is also cooperation with traditional practitioners to popularize the use of traditional remedies.

In Somalia, a primary health team may comprise a CHW, a traditional birth attendant (TBA) and an MCH assistant. Costa Rica (7) utilizes a nurse auxiliary and a rural health assistant. In Mali (43), three types of part-time worker have been described - a TBA, a hygienist/first aid worker, and a health promoter. In Afghanistan (16), the team comprises a village health worker and a TBA; in Thailand, a village health communicator and a village health volunteer, and in Honduras (34), a community representative, a health guardian (who may be a traditional healer), and a TBA.

The tendency to use primary health teams has led to some specialization, particularly in relation to the sex of the CHW. Female CHWs direct more attention to maternal and child health and family planning activities, while male CHWs take care of other functions. This is particularly true of Afghanistan (16), China (23), the West Azerbaijan project in Iran, and the Leyte Sab-a Basin Development Authority (LSBDA) project in the Philippines. Male CHWs are also used in areas where extensive trekking is needed to reach remote rural areas, as noted in Costa Rica (6).

The country experiences indicate that the resources of the traditional sector have not been fully exploited in such a way as to facilitate and supplement the tasks of the CHW. In most countries, TBAs are being trained and integrated into primary health care teams. The inclusion of the traditional healer in such teams is lagging behind in most countries. In the "state-of-the-art study" of 180 health projects in developing countries, only 8% of these projects were found to involve traditional healers (42). Thus, this important local resource was not being tapped.

The possibility exists that if the traditional healer is not integrated into the PHC system, he might be antagonistic towards the CHW. The MPA (medroxyprogesterone acetate) project (33) in Egypt brought out the important facts that "any attempt to introduce innovations in health and healing practices at the village level had to take into account the existing structure and relationships at the level". The study also emphasized the fact that modern and traditional health systems "complement rather than exclude one another", as has been clearly demonstrated by the Chinese experience (23). The role of the traditional sector in primary health care will increasingly become an important issue.

Determination of functions

The functions of the CHW are usually determined by the ministries of health with little involvement of the community. However, problems might arise if countries fail to involve the community in this aspect of CHW programmes.

In the original plan of the Maryland County project in Liberia the role of the village health worker (VHW) was given more emphasis than that of the village development committee. The VHW was seen by the health professionals as an agent for change in the community and a catalyst both in health and development matters. During the implementation of the project, the process of change was found to be very slow because the role outlined in the plan for the VHW, among other factors, did not fit the community's conception of him. The VHW was considered as a servant by the community and not a leader since leadership in Liberian communities has "to come from older, more influential members of the community". The roles of the VHW and the village development committee had therefore to be redefined to take into account the views of the community.

Somalia, however, reports that the determination of the functions of the CHW is by the community and the health staff working in the field, through a series of meetings and workshops. Botswana intends to involve the community more in this area, since the fact has been realized that the community sees its needs differently from the health sector.

In order to ensure that the functions of the CHW are congruent with community perceptions, these functions will necessarily have to be determined jointly by the health professionals and the community.

Coverage

The size of the population covered by the CHW varies widely from country to country - with a low ratio of 1:200 in the case of the health aides in China, to a high ratio of 1:2-4000 in the Sudan.

In Botswana where the family welfare educator (FWE) spends a good proportion of her time in a clinic or health post, she is able to visit a family only occasionally. It is estimated that the FWE could visit many of the families or homes she is expected to cover in one month if her tasks were confined mainly to home visits and work in the community. In Costa Rica (21), where the rural health assistant spends most of his time in the field, he is able to visit about 400 homes in two months or approximately 12 or 16 homes per day. In Iran the behdasht-yar (male CHW) and the behvarz (female CHW) cover between them 2000 and 8000 people.

The CHW/population ratio is influenced by a number of factors, the most important of which are the range of activities performed by the CHW, whether these activities are clinic-oriented or not, and whether the CHW is working alone or is part of a primary health care team. Another important factor is, of course, the pattern of distribution of the community.

There has been very little evaluation to determine the effective coverage of the CHW. The only categorical evidence is that provided by the evaluation of the Kavar project (38a), which concluded that at the level of activities of the village health worker (which included basic curative care, promotive and preventive activities, record keeping, data collection, and initiation and organization of community development activities) and working an average of 30 hours per week, the optimum VHW:population ratio was 1:500, although the VHW could successfully serve 1000 people. Beyond this size, it was felt that additional VHWs would be needed. It was also felt that it was easier for one multipurpose VHW to serve one village, especially in areas where communities are small and widely dispersed.

In summary, the following suppositions can be put forward. The CHW cannot perform all the range of tasks that have been identified. It is necessary for the CHW to collaborate with other health workers and aides as well as workers from related sectors in community development. These will include the TBA and other traditional health workers. Where the CHW is working in a small, isolated community, he may necessarily have to perform all functions. Above all, the CHW should be a good communicator and an "integral agent for change, not only for health care but for the awakening of his people to their human potential, and ultimately to their human rights" (45).

It is important that the functions of the CHW be determined jointly by the community and the health authorities.

More work will need to be done to settle the question of effective coverage so that countries can set attainable targets.

2. SELECTION AND RECRUITMENT

Selection criteria

Selection criteria for the CHW vary from country to country, although some are becoming widely accepted in view of the common nature of the problems encountered. These criteria relate to: the ability of the trainee CHW to assimilate and practise what he or she is taught, previous experience of service within the community, acceptability to the community, maturity, and a sense of responsibility and dedication.

The main criteria for selection concern age, sex, literacy, residence in the community, and ability to command the respect and to gain the acceptance and confidence of the community. Other criteria include a proven ability to coordinate multiple efforts for the benefit of the community, as in Costa Rica (44), personality and previous involvement in community activities, and active contribution to voluntary or community organizations as reported for the Commonwealth Caribbean and the BARIDEP project in Ghana. In China, barefoot doctors are chosen on the basis of their proven willingness to serve their fellow peasants. In the Chimaltenango project in Guatemala (3) and also in China, intelligence and eagerness to learn are considered important criteria. In Thailand, sociometric techniques or sociogram methods are used to identify community leaders whom villagers say they would turn to for advice on health matters. While the cost-effectiveness of this method has been questioned, as compared to relying on the advice of community leaders and other members of the community for the selection of candidates (42), if carried out by local health personnel it does not require additional financial resources.

Age of the CHW

Experiences in Botswana, Ghana (27), Iran, Jamaica, the Philippines (5), and the Sudan have shown that more mature, middle-aged men or women, who are good opinion leaders, perform more satisfactorily than young CHWs. The evaluation of the Kavar project (38a) confirmed that the confidence of villagers in the village health worker increased with the age of the VHW. This tendency was found to be consistent with the common belief in Iran that wisdom increased with age in health matters. It required a truly outstanding VHW to overcome these prejudices, as happened in the case of a 15-year-old VHW who was rated the best by the community.

Generally, young CHWs have been found to have less standing in the community and less commitment and therefore do not command respect. Secondly, since they have better chances of obtaining other more lucrative jobs, particularly in the urban areas, their drop-out rate is reported to be higher (27).

Sex of the CHW

There are generally cultural preferences or biases regarding the question of the sex of the CHW. Some communities prefer females, others males, and some train both females and males as CHWs. Preference for either sex is sometimes influenced by the functions to be performed by the CHW and the traditional association of certain functions with a particular sex.

In Costa Rica, only men were selected as rural health assistants because of the extensive travelling involved in difficult areas. In the Simplified Medicine Programme in Venezuela (19), males were included when it became necessary to have auxiliaries in the very remote villages where new dispensaries were being established. In Afghanistan (16), women were unwilling to visit male VHWs for problems relating to pregnancy and childbirth. A dai (traditional village midwife) had to be trained to work with the male VHW. Botswana and the Solomon Islands have recommended the recruitment of married women where females are to be trained as CHWs because they are more stable.

Literacy

Views on the need for literacy as an important criterion for selection differ from country to country. Most countries, such as Botswana, Burma, the Commonwealth Caribbean, Democratic Yemen (43), Ghana (27), Papua New Guinea, Philippines, require a minimum level of elementary education of the candidate. There are other programmes such as Gambia's (47) and the Jamkhed project in India (1) that are recruiting mostly illiterates for training as CHWs, although India's much larger national CHW programme has required certain educational standards.

Villagers with an education level higher than the minimum elementary education are rarely recruited as CHWs. This may be due to the fact that a higher educational level, as found in Papua New Guinea, makes transfer to the rural areas unacceptable and also makes the CHW desire to become a professional health worker.

Too much insistence on even the minimum level of elementary education may limit the pool of prospective candidates from which selection can be made. This would also "risk losing the remarkable capacity for recall that is often found in illiterate people" (5). In Papua New Guinea, the requirement of an ability to speak and read English was not applied rigidly since teaching was sometimes done in Pidgin English, which was widely understood. This ensured a supply of aid post orderlies where there were no schools. In the West Azerbaijan Project in Iran, although there was emphasis on a minimum level of elementary education, experience in this project showed that sufficient general knowledge and maturity were more important factors. In China the level of formal education did not play a major part in the selection of the barefoot doctor. In the Sudan, it was found that mature CHWs, even with an educational level lower than the minimal elementary education, were more effective because of the responsibilities involved. An analysis carried out in the Philippines (5) also showed that CHWs with lower educational levels, but mature and with some health experience and with deep-rooted ties in the community made better CHWs.

In the Gambia (47), where well-motivated, mature and responsible but illiterate villagers were recruited, part of the first four weeks of the training programme was devoted to functional literacy to correct this deficiency. In the Kavar area (38a) of Iran, villagers with minimal educational background were given their training in the local language. In the Maradi project in Niger (17), where some VHWs were illiterate, literacy courses were given to enable them to record their activities.

It is generally accepted that some minimum level of literacy is necessary to enable the CHW to keep records of his activities, relate to the health system, and undergo the training programme designed for him. He may acquire the needed ability through the formal educational system, through a functional literacy approach, or through learning to read and write the local language.

Recruitment process

The acceptance by the community of the candidate selected for training as a CHW depends to a large extent on the recruitment process and the standing of the trainee within the community. The quality of the candidate depends to some extent on the degree of participation of the community in the selection process, as noted in Costa Rica (6), in the Chimaltenango project in Guatemala (3), and in the Lampang pilot project in Thailand (38).

In the Chimaltenango project, trainees were initially selected on the recommendation of the local priest. This approach was found unworkable, and had to be changed to allow selection to be done by the community through the community betterment committee which included a health committee. In Costa Rica, regional health assistants were selected from among people who worked in the malaria eradication programme in the country. These were found unsuitable since they lacked motivation for working for the community. Rural people were therefore selected by the community for training as regional health assistants.

Where local or area councils are responsible for selection, there is the tendency to select the daughters or sons of influential people in the community. In the Solomon Islands, there was the feeling during the evaluation of the VHW programme that members of the area councils, who were responsible for the nomination of candidates, made their choice on the basis of political or personal gain and not necessarily for the good of the village. As a result, the candidates were often found unsuitable for training as village health aides. In Botswana, where the criteria for selection were established by the health ministry and local governments with little consultation with the communities, selection was found on occasion to be unsatisfactory because daughters of influential people were chosen.

A balance is needed between the views of the community, the health system and also the training institutions, since the pattern of allegiance is said to be influenced by who does the selection (5). In the Danfa project in Ghana (47), guidelines for selection were worked out with the village development committee, which in turn screened volunteers for training. In Burma, selection was done by the community on the basis of criteria laid down by health professionals. In Antigua it has been recommended that the selection committee should include health staff as well as community representatives. In India and Iran, recommendations were made by the local people and final selection was made by the medical officer in the primary health centre in consultation with the block development officers (in India) or by a committee composed of the regional health authority and the instructors of the CHW training school (as in Iran).

The inclusion of training institutions in the selection process has not been reported by most countries. It is therefore assumed that this has not been a widespread practice.

It is noted that where the community is actively involved in the selection process, those selected for training may turn out, in many cases, to be acknowledged opinion leaders in the community, e.g., a member of the village panchayat (village council), the vice-president of the school society, as in the northern Indian village of Hosanpur (25), the indigenous traditional practitioner as in the Philippines, or a trusted and respected person in the village as the mullah in some villages in Afghanistan (16).

An important criterion, which is often overlooked by countries using the services of volunteers, is their occupation. It is important to select trainees with occupations that do not take them away from their villages for long periods or occupations that will help them to identify with members of the community and thus to become acceptable to them. In Burma, in a few instances, volunteers selected as CHWs were boatmen or housebuilders - occupations that took them away from their villages for extended periods. This affected adversely their role as CHWs. In the BARIDEP project in Ghana, it was found during the evaluation of the project that one of the reasons most often given for the selection of candidates was the fact that their occupations were identical with those of the people they served. This is also true of the barefoot doctor in China, who might be a farmer working with the farming population or a factory worker, in which case he is called a "worker doctor".

> The criteria for selection should be determined by the health authorities, the community, and the training institution or group. The consensus is that the person selected should be mature and should have previously displayed a commitment to the service of his community. Literacy may be an advantage.

3. TRAINING

The training received by the CHW helps to determine and direct his or her performance in the community. The training should therefore be relevant to the health problems of the community as well as to the tasks that the CHW is expected to perform. In designing training programmes for the CHW, attention must be paid to the following issues: duration, content, venue for training, methodology, availability of trainers, continuing education, and evaluation.

The differences in countries with respect to health problems and the social and economic conditions that affect the role of the CHW are reflected in the wide variations in the approaches to the above issues. There is, therefore, hardly any consensus on these issues.

Duration of training

The duration of basic training for the CHW varies from an initial orientation period of five days, followed by in-service training, in the case of the village health communicator in Thailand (16), to two years in Iran. In most countries, such as Afghanistan, Burma, Costa Rica (44), Ghana, Guyana, India, Jamaica, Mozambique (32), Saint Lucia, Solomon Islands, Venezuela (19), the training period lasts between three weeks and six months.

Some countries have found the basic training period too short, for example, Jamaica, considering the extensive curriculum and duties expected of the community health aides. Venezuela (19) has extended the training period from three to four months while Somalia has recommended a reduction and consolidation of the training period.

Content and relevance

The evaluation and reviews of CHW programmes in Antigua, Botswana, the Solomon Islands, and Thailand have revealed problems in their training approaches relative to the functions the CHWs are expected to perform in the community. In Antigua, the community health aide said he had no training or was inadequately trained in family planning and the taking of blood pressure. In Botswana, it was found that the training given to the family welfare educator did not always make her a competent community health educator. In the Solomon Islands, the village health worker was reported to be doing little in the field of health education and other public health activities because he lacked communication skills since he was not taught how "to teach health". The reason given for this was that the trainers lacked expertise in this area. In Thailand, training was based on 62 self-learning modules; this was found to be too complicated and extensive and not all parts were relevant to the problems of the area. In order to make its training respond to the health needs of the country, Bahrain has reoriented its curricula for primary health workers and changed the emphasis from diseases to the management of health problems.

Most training courses for CHWs cover both theory in a classroom setting and practical or field training in a health facility or in the community. The mix and the scheduling of these two components of the training programme vary from country to country. In Afghanistan (16), training was entirely practical. In the West Azerbaijan project in Iran, more emphasis was placed on field training in the "health house", with the VHW spending four to six months in the classroom and between eighteen and twenty months in the field. In Papua New Guinea, 50% of the two-year training period was spent in the classroom and 50% in the Province for practical training. In Democratic Yemen, training was field-oriented but intermittent, with a week of theory in the classroom followed by three weeks of practice and three months of working as a VHW.

A review of the village health aide (VHA) training programme in the Solomon Islands showed that the type of training given the VHA, which covered six weeks of didactic lessons and six weeks of field experience, was suitable for young students who had just left school and for imparting knowledge on simple medical care and first aid. In other

words, the training "suited a particular type of person and a particular series of tasks". Considering the fact that the VHA in the Solomon Islands was expected to undertake, among other activities, health education, promotion of environmental health and support for health-related development projects, and considering the intention to recruit semi-literate, married and older trainees, it became obvious that a new approach that put more emphasis on field training was needed. This may be due to the finding that the attention span of such trainees is short and their capacity to assimilate unfamiliar information limited.

The workshop held to evaluate the primary health care programme for the lower Shabelli Region in Somalia also recommended that training should be more practical than previously.

Emphasis on practical training calls for careful planning, programming, and supervision to avoid the problems encountered in Papua New Guinea, where the one-year practical training for aid-post orderlies was found unsatisfactory because of lack of proper programming and supervision.

Teaching methods

Various educational techniques and methodologies have been developed for the training of the CHW. This study did not unearth any comparative analysis of these techniques that has been carried out. It is therefore difficult to assess which techniques are generally more appropriate to the background and functions of the CHW.

In the Lardin Gabas rural health project in Nigeria, lessons were given through story-telling and other techniques used by the village health workers (VHWs) in the villages. This was found effective and suitable to the background of the VHW. In Thailand, the self-learning modules used were found to be important to the CHW training programme. The only criticism was that the content was "too much" and the size of the lettering was too small. In Nepal, training was done in modular fashion. In the West Azerbaijan project in Iran, the block system was used with each block classified into procedures and tasks. This was found a useful teaching method since a block could be repeated during the weekly seminars if the CHWs showed a weakness in their knowledge of that block.

A review of the role and status of community health aides (CHAs) in the Commonwealth Caribbean recommended the use of flow charts as a teaching/learning strategy for the training of CHAs. This suggestion was based on the positive results of a three-month period of in-service training of 141 CHAs using the WHO training manual The primary health worker, adapted to flow-chart form. This strategy is said to result in unambiguous, step-by-step instructions for solving clinical problems. The progress report on the VHA in the Solomon Islands also recommended the use of flow-charts.

The World Health Organization is undertaking a research project to develop problem-management flow-charts (13). This aims to facilitate the training of the CHW and make it possible for him to perform his functions effectively "within the constraints of limited education, training period, resources, skills, transportation, support and communications". Several sets of problem-management flow-charts have been developed. One set is to help the CHW identify village health problems - curative, preventive and promotive and the other set is for the TBA. The project is being evaluated in Mexico and India. It is expected that "if it meets the objectives for which it was designed, it will be invaluable to the VHW and other primary health care workers in general" both during and after training.

Training materials

Manuals have been developed in most countries by professionals (either by themselves or with external assistance) for the training of the CHW and for his use as a reference book after training. In Papua New Guinea, the lack of working manuals affected

adversely the training of the aid-post orderly and his services. Some countries have adapted the WHO training manual The primary health worker (46) to suit local conditions. In India, the training manual has been translated into many languages. In the Philippines, a training manual has been prepared by CHWs.

In the Solomon Islands, the VHA training manual was criticized as being a "hybrid of trainer's and trainee's manuals, thus causing confusion in the minds of both, as being too complex and high level, full of mistakes and poorly bound". In the Simplified Medicine Programme in Venezuela (19), special attention was paid to making the training manual simple with regard to knowledge and language but containing the required matter. Most of the technical terms in the manual were replaced as far as possible with the "native lexicon" to facilitate comprehension by the auxiliary and to avoid the use by him of language not understood by the local population. In India, the manual was bound in loose-leaf form so that changes could be easily incorporated.

Other important teaching materials include audiovisual aids, charts, models, etc. These materials are indispensable to the CHW training programme in view of the level of education of the CHW. In the Huehuetenango health promoters' programme in Guatemala, where promoters had second-grade education only, emphasis was on audiovisual aids. In India, the lack of these materials has been a major hindrance to the teaching programme for community health volunteers.

Continuing education

It appears from the reports reviewed that the importance of continuing education has been recognized by most countries, especially in view of the level of education of the CHW and the short duration of the training period. Most countries therefore report some continuing education activities in the form of in-service training or refresher courses or a combination of the two.

In India and the Sudan, in-service training is not formally planned and structured. It is given by the supervisors during visits to the CHW's area of operation or when the CHW visits the primary health centre to collect his honorarium (India). The problem with this type of in-service training is its irregularity, since it depends on the frequency of supervisory visits. Supervisory staff sometimes take these visits as inspection tours rather than ones meant to guide, help, and educate the CHW.

In Afghanistan (16), Costa Rica (21), Guatemala (3), the West Azerbaijan project in Iran, and Peru (20), continuing education is organized at regular intervals ranging from once a week in Guatemala and Iran to once in six months in Afghanistan. It was found in Iran that with the increase in the numbers of CHWs and the increase in coverage, weekly seminars during which in-service training was given were becoming difficult to organize. It is therefore important that in-service training should be properly scheduled so that it can be supported on a regular basis.

In the Kavar project (38a) in Iran, and in the Huehuetenango health promoters' programme in Guatemala, both in-service training and refresher courses were given. The refresher courses were given after CHWs had spent a year or more in the field.

For continuing education to be regular, continuing, and educative, it is important that it should be properly planned and that, when planning the basic curriculum, the long-term in-service training needs of the CHW should be anticipated. In Thailand, 63 self-instructional modules were designed to cover both the basic formal training and in-service training programmes. Since only 20 of the 63 modules could be completed within the basic training period, the rest had to be followed during the period of continuing education.

In China, an innovative and systematic approach to continuing education has been developed (15). The barefoot doctor, after his initial training, spends one or two days per month in the commune hospital where he discusses his problems with his supervisor and seeks his guidance. He also undergoes "the refresher training cycle", which lasts

one or two weeks, once or twice every year. In addition, he is visited by students and teachers from medical schools and by mobile health teams, which also provide continuing education. In China, continuing education is, therefore, constant, regular, properly structured, and geared towards improving the skills and performance of the barefoot doctor. Continuing education is also considered part of the supervisory process.

It is not obvious from the literature to what extent periods of continuing education for CHWs train personnel to undertake new and revised tasks, train them to perform daily tasks more efficiently, and reorient them to changing concepts, priorities, and techniques.

Venue

Community health workers have been centrally trained at training centres in countries like Botswana, Ghana, and Iran. In Nepal (9), there are two types of CHW. One type (village health workers) is trained at training centres. The VHWs, in turn, play a major role in the training of the second type (community health leaders) whose training takes place partly at the health post and partly in their village. Although this approach to training exposes them to health problems generally, it does not provide them with experience in the local setting in which they will actually be working. Secondly, CHWs from remote parts of the country might find it difficult to come to a training centre for both basic and in-service training (since both are usually held at the centres) in view of the poor transportation systems of many developing countries. Thirdly, the centralization of training limits the numbers of CHWs that can be trained at a time.

Where training is done at specific training centres, there is also the likelihood of field training taking place in an alien centre, with the result that continuing education is divorced from the initial training, as was noticed in Botswana. In the BARIDEP project in Ghana, where the training of the community clinic attendants (CCAs) was done at identified training centres with no facilities for practical training, CCAs had to be transported to other areas for this, under the supervision of the health centre superintendent who did not participate in their training. The implication is that trainers will find it difficult to monitor the progress of the trainees.

Recommendations have been made for the decentralization of the training programme of Botswana to enable emphasis to be put on local problems and approaches.

In most countries, for example, Afghanistan (16), India, Jamaica, Mozambique (32), Sudan, and Uganda, training is decentralized. Most of these countries train their CHWs at rural health facilities which makes it possible to expose the CHW to rural health problems. These facilities are more widely available and closer to the domicile and area in which the CHW will be working.

In the Sudan, where hospitals are used as training centres, the CHW tends to be biased towards clinical activities. The Jamaica workshop did not therefore consider the hospital to be a suitable setting in which to train the CHW. The technical discussions at the Thirty-fourth World Health Assembly, however, pointed out that "hospitals constitute a major health resource in most countries and cannot nor should not be dismissed from consideration. Rather, they should be turned, in so far as possible, into centres of active health promotion and prevention with strong community guidance so that medical training can be reoriented to be based on PHC."[1] However, until this reorientation occurs the hospital will continue to be an unsuitable place for training CHWs.

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1 See "List of unpublished documents consulted".

Trainers

One of the bottlenecks in the development of CHW programmes has been created by the critical shortage of specifically trained teachers. This problem will become even more critical when many countries currently implementing pilot programmes start extending these to other parts of the country.

The trainers of CHWs have generally been selected from among health personnel at different levels of the health system. Occasionally, health-related personnel are included - mostly on a part-time basis - in the training team, as in Botswana, Guatemala (3), Niger (17), and the Sudan. Sometimes CHWs are included, as in the Kavar project in Iran (38a), after they have been given some training. In Nepal (9), VHWs are trained by full-time trainers. CHWs are trained by health assistants and by VHWs. In Central Java in Indonesia (41), the scarcity of resources has led to the development of a "self-multiplying system whereby the first generation of health auxiliaries, after six months experience and additional training in teaching, instruct a second group of health workers - the second group teaches the third, the third teaches the fourth, and so on."

Health personnel, who are selected as trainers of CHWs are sometimes exposed to short training periods in addition to their basic health training, ranging from one to four weeks in India to three months in the Sudan. Iran and Yemen have initiated teacher training programmes for trainers of CHWs. Sometimes no training is given for the purpose, as in Papua New Guinea where the trainer is consequently found to lack experience in lesson planning, teaching methodology, evaluation, and examination techniques.

It is stated by Fendall (14), and confirmed by the present study, that teachers are being selected on the basis of "availability and expediency rather than on vocational aptitude, knowledge and motivation". In Thailand, it was observed that trainers of CHWs who were local health personnel were not interested in training, were not clear about the policy and concept of primary health care, and did not follow guidelines for training because of the lack of interest in teaching.

It is of the utmost importance for trainers of CHWs, including doctors and nurses, to be given specific training to enable them to teach people of the level of the CHW, select appropriate methods for teaching, construct curricula and supervise students in service situations (14)(48). This is to ensure that the CHW is appropriately trained to perform the tasks and functions assigned to him. In order to facilitate such training activities, manuals for trainers, which were found lacking in all countries examined, will need to be developed, as recommended by Iran and Ghana.

Evaluation of training programmes

Training programmes have been evaluated by many countries, but the evaluation has focused mainly on the trainee CHW. The evaluation of training programmes for trainers has hardly been reported. However, in Iran, yearly seminars were organized for trainers, presumably, to evaluate teaching methods amongst other issues. A similar observation was made in the "State of the art" study of 180 health projects in developing countries (42), in which it was indicated that there was relatively less evaluation of training programmes for trainers of CHWs than of training programmes for trainee CHWs.

> Teachers of CHWs should be specifically trained for the task. The curriculum should be determined by the functions that the CHW is expected to perform on the basis of the priority needs of the community. As far as possible, training should be practical and properly supervised. Training manuals should be simple and training

materials should be produced locally, as far as practicable, thus ensuring relevance to the problems and sociocultural circumstances of communities. Continuing education should be built into the training system from the beginning and should be well structured. Training programmes for both trainers and trainees should be evaluated periodically to enable appropriate changes to be made. Training of CHWs should be decentralized to allow exposure to local health and other problems.

4. REMUNERATION

The remuneration of the CHW has been recognized by most countries as a vital issue for two reasons. First, it is important as a motivational factor, assuring the sustained interest of the CHW in his activities. Second, the fact that a new cadre of health workers has been created means that additional resources for remunerating these workers have to be created.

Three main sources of funds can be identified, namely the government through budgetary allocations, the community through the mobilization of community resources, and fee-for-service, or a combination of any of these. The fee-for-service method of support will not be discussed in this review, since it is not widespread and the Jamaica workshop believed it to be open to abuse. Moreover, it might deter people from using primary health services, as reported from the Puno region in Peru (20).

The method of remuneration will, of course, depend on the country's political, socioeconomic, and cultural circumstances.

Remuneration by the state

In countries like Botswana, Costa Rica (7), Iran, Jamaica, Liberia, Papua New Guinea and the Sudan, the CHW is a salaried, full-time government employee. He is therefore subject to the civil service regulations and disciplinary procedures that obtain in his country, and he does not collect fees for the services he renders. In Papua New Guinea, although the CHW is paid by the Government, he sometimes receives some support from his community in the form of a house and land for gardening.

The problems associated with the government taking full responsibility for the remuneration of the CHW arise from the attitudes of the community towards the CHW and the conditions of service of the CHW as compared with those of other workers with similar backgrounds. It was found in Botswana, the West Azerbaijan project in Iran, and Papua New Guinea that when paid by the government the CHW tended to have less commitment to the community, especially since the community then had less commitment to the CHW. In Papua New Guinea, for instance, the community sometimes did not feel obligated to provide the aid post orderly with a house or land, as was their responsibility, or assist him to build his house. The community saw the CHW as a government employee who was performing activities at the community level on behalf of government and not as their own CHW whose activities they should support. This problem was compounded in Botswana by the fact that the family welfare educators wore uniforms and were paid salaries "that put them socially above the community".

In Papua New Guinea, where the aid post orderly was classified as a casual labourer, he was not entitled to the benefits and advancement opportunities of the civil servant, with consequent dissatisfaction and a lowering of morale. For example, the aid post orderly compared himself with the hospital and health centre orderlies, who, like him, "received on-the-job training and no recognized qualification" but yet enjoyed better service conditions like higher salaries and opportunities for advancement, and were assured of job security. In view of the differences in service conditions, the hospital orderlies refused transfer to aid posts where they would be regarded as aid post orderlies. A similar situation is reported from Mozambique (43), where problems arose when the village health worker began to compare himself with the agricultural extension workers and schoolteachers in full-time paid jobs whose background and training were similar to his.

These country experiences underscore the importance of taking measures to inform and educate the community about the activities of the CHW and about PHC in general, if countries are to avoid the frustrations being experienced by some CHWs who are government employees.

Costa Rica (44) and Liberia, for instance, have made conscious efforts to educate and sensitize community leaders (Costa Rica) and members of the village health committee

(Liberia) about the role and functions of their respective CHWs and the part that the communities are expected to play. These leaders are, in turn, expected to transmit such information to other members of the community and to stimulate community participation.

This might be one method of enhancing the advantages associated with government as the major source of remuneration. As stated by representatives of Botswana and Jamaica these advantages include:

- the assurance of a regular monthly income,
- the devotion of the CHW's full time and attention to his work, since he is not involved in other income-earning activities,
- the relative ease with which the CHW can be guided, supervised, and controlled, and be made to observe staff rules, regulations, and discipline.

The question of a career structure for the CHW will be dealt with in section 5 of this review (see p. 26). The point should, however, be made that developing a career structure for the CHW becomes an even more crucial problem when he is a salaried worker on the government pay-roll.

Remuneration by the community

The other major source of remuneration is the community, which in most instances supports the volunteer/part-time CHW. In India, however, the government pays him an honorarium in addition. The CHW may be remunerated by the community in cash and/or in kind.

In the Sahelian countries, for example, it was more common for village health workers to be remunerated in kind, e.g., by being given bags of millet at harvest time or by the villagers helping to till their fields. In Kenya, the CHW was remunerated through cash contributions by community members; in the Philippines through community cooperatives, in Himachal Pradesh (41) in India through pre-paid health insurance schemes, and in Mali (43) through profits from the village pharmacies. In the BARIDEP project in Ghana, some village development committees helped the community clinic attendant on his farm in addition to the pay he received from the community.

The remuneration of the CHW by the community demands that the source of income be regular and sustainable to avoid a loss of interest and a high drop-out rate. One of the major problems of a pilot project directed by the Department of Community Health of the Faculty of Medicine in the University of Nairobi, Kenya, was the difficulty of sustaining the expected level of financial contributions by the community for the support of the CHW. In the Solomon Islands, two of the village health aides who stopped working as VHAs did so after their villages stopped paying them. In Mozambique (43), problems arose when the communities failed to support their VHWs as expected. In the Kasa and Palghar nutrition projects in India (40), one of the reasons given for the high drop-out rate of the part-time social workers was the low rate of remuneration by the community. In the BARIDEP project, some communities found it difficult to raise funds for the support of the community clinic attendant, who was left for months without remuneration. This led to the phasing out of the programme in some communities.

These problems may be aggravated when the volunteer/part-time CHW comes to realize the extent of his responsibilities and the demands on him by the community. This concern was expressed in reports on the Philippines and Thailand. Long-term solutions will have to be found if countries are to be able to draw on the large reserve of workers that the use of volunteers allows (5), especially as these workers do not aspire to be formal health officials.

The creation of new economic activities has been useful in the following countries as a solution to these problems. In Ethiopia, producer cooperatives were developed in

conjunction with farmers' associations to create economic activities and this made financing possible for a variety of development activities, including payment of VHWs. In the Philippines, the approach adopted was the formation of community cooperatives, such as cooperative stores, agricultural cooperatives and the establishment of cottage industries; and in Mali (43), village pharmacies were set up, which were expected to yield income for the support of both the auxiliary midwife and the VHW. In the BARIDEP project, community farms have been established to provide income both for the remuneration of the community clinic attendant and for community development activities.

Other incentives

In addition to remuneration of the CHW in cash and/or kind by the government and/or the community, the introduction of other incentives has been found to be important to CHW programmes. These incentives may take various forms. In Yemen, primary health workers were exempted from military service. In the Maryland County project in Liberia, the VHW was paid a bonus of US$ 25 per month and this was considered as a contributory factor to the success of the CHW programme. In the Kavar project in Iran, VHWs were given monetary incentives for successful environmental sanitation work (38a). In Thailand, free medical service is being introduced as an incentive for CHWs.

The importance of adequate remuneration of the CHW and job satisfaction have been demonstrated by the Kavar project where 10 out of the first batch of 16 trained VHWs relinquished their former jobs to become full-time VHWs. The explanation given was that the VHWs found their remuneration adequate, considering their duties and responsibilities and the salaries earned by other workers (e.g., common labourers), and that their tasks as VHWs demanded their full-time attention, or possibly a combination of these two factors. This situation would not have arisen if the job of VHW had not offered him the security he needed.

> The remuneration of the CHW is being tried in various ways and forms. The success of any scheme depends upon the social and economic circumstances of the given community and the political will and commitment of the state, as well as on the extent to which the community is aware of its responsibilities. Adequate and sustained remuneration of the CHW is essential to reduce the high drop-out rates. What is not clear is the size of the resources from both the state and the community that would be needed to maintain a fully-fledged national CHW programme.

5. CAREER PROSPECTS

In addition to adequate financial support, job security with career prospects, particularly in countries where the CHW is part of the civil service structure, as indicated earlier, is necessary to avoid frustrations and lowering of morale and to ensure continuity of service. The need for career prospects (upgrading) may not be so critical in the case of volunteer/part-time CHWs.

An assessment conducted by the University of the West Indies indicated that 62% of 197 community health aides interviewed wished to advance further within the health field. In Jamaica, some aides who have met the prerequisites for the midwifery course are recommended for acceptance; and in Saint Lucia, aides who have the relevant qualifications and have shown interest are encouraged to pursue careers in the health service.

In the Sudan (5), the CHW may be upgraded into a medical assistant whose duties include the supervision of CHWs. The United Republic of Tanzania plans to facilitate progress by training of selected CHWs, who are part-time volunteers, to the status of maternal and child health aides who are "full-time paid auxiliary members of the health team."

In China, the barefoot doctor has the opportunity to improve his professional skills through further training in a country health school in order to become a medical assistant or even to proceed to a medical college.

"An innovative, ladder-type, progressive curriculum" (49), which prepares the barangay health worker for various positions in the health system, is being implemented in one of the depressed regions of the Philippines between the Medical School of the University of the Philippines System and the Department of Health. After the initial training of three months, the barangay health worker goes through the second cycle of the curriculum, which covers a one-year period and prepares him to function as a midwife. After another year of training, he qualifies as a public health nurse. The fourth stage of the programme, which will be of six months' duration, may lead to a bachelor's degree in rural medicine or qualification as a nurse practitioner - this has not yet been decided upon. The trainee may "quit at the end of any stage depending on his capabilities, interest and the decision of the village." The trainee who is chosen by the community is expected to return to the village to work after completing the programme.

Recommendations have been made in the Commonwealth Caribbean, with respect to career mobility that: "(a) community health aides be prepared as community development workers and include functions in all sectors, (b) a structure be devised to include supervising CHA career structure with supervisory grades."

As discussed in the section on supervision, the upgrading of the CHW to the status of a supervisor is the first step that many countries have taken in the attempt to create career prospects for the CHW.

Career mobility calls for careful planning if the possibility of the CHW losing his community orientation through promotion or upgrading into the health system is to be avoided. Bryant (5) expresses concern about the type of arrangement adopted by the Sudan and the United Republic of Tanzania. The issues are:

(a) whether the upgrading of the Tanzanian CHW into an auxiliary member of the health system will not reduce his effectiveness in the community;

(b) how the promotion of the CHW in the Sudan into a medical assistant who is mainly a clinical worker will influence his broader role as a CHW. "Would this not then spell an end to the distinctive role of the community health worker? Or is it possible to reorient the role of the medical assistant so that the community health worker, upon being upgraded, remains community-oriented and becomes a medical assistant with community interests and not an auxiliary physician?"

The issue of career prospects for CHWs has to be handled with sensitivity. Each country will have to address this issue and decide whether the development of a career structure for the CHW is compatible with the maintenance of the unique community orientation and role of the CHW.

6. ATTRITION RATES

Information available on attrition rates is very scanty. The little information that could be obtained from the literature points to the fact that the turn-over of CHWs is high for a number of reasons, the most important being poor selection and low remuneration.

In Costa Rica (6), the attrition rate of the rural health assistant was about 20% during the first two years when people who worked in the malaria programme, and who were not interested in community work, were selected for training as rural health assistants. With the training and utilization of community members who were interested in community work, the attrition rate dropped to 2%.

In the Kasa and Palghar nutrition projects in India (40), the drop-out rate of the part-time social workers was found to be about 60% after 1-2 years. The attrition rate for males was found to be higher than for females. The reasons given for the high drop-out rate in these projects included: low remuneration, work overload, finding other jobs with higher salaries and, for female workers, marriage. The drop out rate in India's national CHW programme, however, is thought to be less than 5% per year.

In the Simplified Medicine Programme in Venezuela (19), where auxiliaries were part of the regular staff of the organized health services, the reasons given for the high turn-over were: movement upwards to higher positions in the health system, marriage or family matters, and finding better opportunities in other fields. Between 1962 and 1972, about 25% of the 595 trained auxiliaries left the programme.

> Experience on a global basis will have to be shared by countries on the issue of attrition rates. This will be most useful in decisions about the selection of CHWs, the planning of their work programme, and the incentives provided.

7. SUPPORT SERVICES

Health-system and community support for PHC activities were discussed extensively both at the Jamaica workshop and at the Thirty-fourth World Health Assembly (47). Consequently, only the main problem areas and solutions that countries have evolved with respect to these problems will be highlighted in this section. The areas that will be discussed include drugs, supplies and logistics, communication systems, supervision, reorientation of health personnel, community participation, intersectoral cooperation, information systems, and evaluation.

Drugs, supplies and logistics

The extension of the coverage of health care through the utilization of CHWs means that there will be a greater demand for drugs, equipment, and other supplies. The large sections of rural populations that were previously underserved or unserved will expect adequate coverage through CHW activities. Failure to meet the expectations of these populations will destroy the image or credibility of the CHW. In the Lampang pilot project in Thailand (38), the maintenance of volunteer CHW activities that were especially related to the regular supply of drugs posed a major problem. Volunteer activities were adversely affected because drugs were in short supply and the volunteer could not give help to the community in time of need. In response to this problem the idea of a village health cooperative is being developed.

It is therefore critical for the effective functioning of the CHW that drugs of the right quality and quantity are delivered, at appropriate intervals, to the periphery where they are needed.

A number of problems have made it difficult for many countries to satisfy the drug requirements of CHWs. These problems relate to the adequacy of supplies, management systems for procurement, storage, and distribution.

In Ghana, Liberia, Somalia, Sri Lanka, the Sudan, and Uganda, for example, the supply situation is very poor. Liberia reports inadequate supplies, even of basic items like chloroquine and aspirin. In the Kintampo project in Ghana, shortages of drugs at the central level made it impossible for the drug needs of the community clinic attendant to be satisfied. Even when drugs were available, the quantities were deficient. The fundamental problem in Somalia was the lack of funds and expertise and the intrinsic bureaucratic processes that affected procurement and the scheduling of drug distribution. In the Sudan, the problem was lack of foreign exchange for drug importation. In Papua New Guinea (11), where there was no national shortage of essential drugs, there were difficulties in maintaining adequate levels of drugs and dressings at aid posts because of administrative problems. Sometimes, the health centre failed to requisition enough drugs and dressings to meet its requirements and those of aid-post orderlies, or the latter might underestimate their needs.

It is evident that the present logistic system of supply, which has failed to maintain supplies even at central levels in most developing countries, cannot cater adequately for the increasing demands of the CHW. Moreover, since most of these countries import the greater proportion of their drugs and equipment requirements, inflation and consequent cost escalations make quantities imported inadequate, even where budgetary allocations for drugs may have increased in absolute terms.

In China (23), the intensive use of local herbs makes acceptable and appreciated drugs readily available and cheaper. In the Punjab, India, and in Sri Lanka, the CHW carries traditional medicines in his primary health care kit. During the technical discussions at the Thirty-third session of the Regional Committee for South-East Asia, it was stated that "the promotion and development of traditional medicine are not matters of expediency but are appropriate approaches for [the] countries [of this Region] to become self-reliant through the development of an indigenous drug technology in keeping with their cultural heritage, social needs, and rich natural resources".

Storage facilities, which in most countries are lacking at the peripheral level, have to be constructed to enable drugs to be stocked for the use of the CHW. It was suggested during the evaluation of the Maryland County project that a small depot should be established for the storage of six months' supply of drugs for the CHWs. This suggestion is feasible only where drugs are not in short supply.

In countries where no drug shortages have been reported, appropriate mechanisms have been developed to ensure the regular supply of drugs at the community level. In Ethiopia, members of the community made contributions of money for the initial purchase of drugs from the central medical stores through farmers' associations. The replenishment of drug supplies was paid for by the community as they drew on these. In the Republic of Korea, the initial stock of drugs was provided by the county and central government. Subsequent drug supplies were purchased with fees collected from patients utilizing these facilities. Vaccines were, however, provided free by the government.

In some parts of Senegal, village dispensaries have been established to cater for the drug needs of populations in very remote villages. The dispensaries are given a 20% rebate on drug purchases and villagers are required to pay for the drugs dispensed to them. In other parts of Senegal, a pre-paid system has been adopted. At harvest time each member of the community pays a fixed sum, which entitles him to free treatment and drugs for one year. In China, the cooperative medical service organization to which community members contribute entitles them to free drugs. In Thailand, the government provided an initial amount which served as seed capital for the setting up of a revolving fund for drugs for the village health cooperatives. Here, too, drugs were purchased from the government pharmaceutical organization at a discount.

> These examples show that communities will have to be actively involved in the drug supply problem to ensure that basic drugs are available at the periphery on a regular basis. It is also clear that communities will have to supplement the contribution of governments in this area. Although there was no evidence concerning the cost, effectiveness, and popularity with the rural population of the mechanisms identified above, they appear to hold promise for the future. They can, however, only be applied in situations where basic drugs are readily available. On the evidence, it seems that governments, on their part, will need to take immediate steps to solve the problem of drug shortages that have disrupted CHW activities in many countries. There is obviously a need for appropriate management technologies to be developed to ensure better procurement and storage procedures and availability at the periphery, and to monitor drug usage. Reliable and adequate transport facilities will have to be made available to facilitate drug distribution from the central level to the periphery. Adequate financial resources, both local and foreign, will need to be allocated for the procurement of basic drugs. Most developing countries will need to look into the possibilities of manufacturing locally (or on a regional basis through technical cooperation) the basic drugs required by the CHW. Investigations should also be carried out into the possibilities of manufacturing and using local herbal drugs to supplement the supply of conventional drugs.

Communication system

A reliable communication system is important to the CHW as it can serve as a referral system, especially in situations where distances to the nearest referral point may be anything from one kilometre, as in Thailand, to over 60 kilometres, as in the Sudan. Such a system can also be used for administration and management purposes, for supervision, and for continuing education. The expensive nature of communication systems has made it difficult for many countries to develop these as part of the support services for the CHW.

In Micronesia (41), citizens' band radio, which is a simple and inexpensive communication unit, is now widely used.

In the Mexican State of Chiapas (7), the radio network that was established to improve health education in the community also serves as an emergency referral system. In Guatemala (41), auxiliaries equipped with radios use these to solve administrative problems, like queries about pay and requests for petrol.

Storms (41) referred to a study in Alaska which showed that "30% of air-time was taken up with administrative functions". There are good radio linkages between community health aides (mainly housewives) in remote parts of the country and hospitals, and "experience showed that a good deal of incidental learning takes place as the health aides listen in to cases being discussed in all communities".

> For communication systems to be useful and supportive to the CHW, countries will have to select systems that they can afford and that are easy to operate and maintain. CHWs will need to be trained to use these and it will also be necessary to train personnel to maintain the communication equipment on a regular basis.

Supervision of CHWs

Continuous, educative supervision is indispensable to CHW activities. Such supervision provides the CHW with reliable and valuable back-up and continuing education and strengthens his credibility in the community and his status as a health worker and member of the health team.

The training and utilization of CHWs and their attendant needs for supervision have put a strain on the health manpower resources of most developing countries, especially in the rural areas where such resources are already scarce. This has created problems with the supervision of the CHWs with the result that those working in rural communities that are distant from any health facility feel isolated.

(a) Supervision by professional health workers

In Papua New Guinea, the supervision of about 3300 aid-post orderlies, nurse aides, and hospital orderlies working in the rural health services, including 2000 one-man operated aid posts, was found to be weak and irregular because of difficulties in communication, transport, and manpower at the health centre. In the Sudan, supervision by the medical assistant was infrequent because of distance, lack of transport, and bad roads.

In Sri Lanka, the frequency and duration of supervision was inadequate because of the acute shortages of supervisory staff at all levels, especially at the central level where one-third of positions continued to be vacant. In Uganda, apart from the occasional monthly visits by the local health staff at the health centre, PHC workers were virtually working in isolation because of the lack of transport and limited resources. Experience from the Simplified Medicine Programme of Venezuela (19) showed that the periodic supervisory visits by the doctor in charge of the medicatura rural were inadequate because of lack of interest on the part of the doctor, infrequent visits, and because too much of the doctor's time is taken up with clinical consultations.

In the Kavar project in Iran (38a), it became apparent after a few years of operation that the health corps station physician expected to supervise the VHW was incapable of doing so because of his many responsibilities at the station. Residents from the Department of Community Medicine therefore had to take over the supervision of the VHW on a rotational basis. This arrangement was unsatisfactory because of the lack of continuity and the work load in the department.

In Botswana, where lines of supervision were not clearly demarcated, the family welfare educator tended to be confused about who to take her problems to - whether to the local government public health nurse or to the ministry of health public health nurse. Furthermore, the orientation of these nurses made it difficult for them to supervise community-based activities. Here, also, supervision was very weak in respect of family welfare educators working in remote areas of Botswana.

In most countries of the Commonwealth Caribbean, the community health aide was supervised by the district nurse or midwife and also by other members of the health team with whom he worked. This system of multiple supervision could be a source of conflict for the community health aide as well as other members of the health team. Other problems with supervision included the "infrequency of contact of the supervisor with the aides, and poor working relationship between aides and supervisors".

In Liberia, the decision to train and use physician assistants to supervise VHWs had to be modified because of their inadequate numbers and their involvement in training courses and surveys, which made it difficult for them to undertake regular supervisory visits.

> The primary or day-to-day supervision of the CHW by health professionals has not proved an effective approach because of:
>
> - the heavy clinical and other responsibilities of the health professionals;
> - the inappropriate orientation of health professionals towards PHC;
> - the inaccessibility of the villages;
> - the possibility of multiple uncoordinated supervision by different health personnel working with the CHW;
> - the general shortage of health manpower.

(b) Supervision by health auxiliaries

Many programmes and many countries are using or planning to use trained auxiliaries, including the CHW, for the purpose of primary supervision on a full-time basis. This ensures more regular and more sustained supervision. Also, such supervisory cadres are familiar with the job and sensitive to local priorities and problems.

In Costa Rica (44), some rural health assistants were selected and given specific training to become supervisors. In the Chimaltenango project in Guatemala (3), the promoters were supervised by an older promoter who was in complete charge of the programme. He was also responsible for the formal continuing education. In Papua New Guinea, some provinces appointed senior aid-post orderlies as supervisors.

In the Huehuetenango project in Guatemala (22), twenty village promoters were selected and given additional training to enable them to become full-time supervisors. Each supervisor was responsible for five to thirty village promoters. He was also to oversee the training of the new promoters. In the Maryland County project in Liberia experienced VHWs were given additional training and promoted as VHW supervisors on full-time salary to replace the physician assistants in some parts of the County. This arrangement was found very satisfactory since they were able to supervise the VHWs on a regular basis.

A second level of auxiliary workers, middle-level health workers, was developed in the Kavar project in Iran (38a). These workers, who had nine years of formal education, were trained in Marv-dasht in Iran for three years and this qualified them as supervisors of the VHW.

In the Simplified Medicine Programme in Venezuela (19), a system of regular supervision was developed by using regional supervisors of "simplified medicine". These were based on the regional health office and devoted their full time to the supervision of a number of dispensaries. They were either former instructors or graduate nurses who had been given special training for the task. Somalia has plans to establish in the rural areas an intermediate supervisory network of specially trained personnel who will operate from a primary health unit. This is meant to decentralize supervision and to shorten lines of logistic support to the CHW. The first demonstration of this scheme is expected to be at Baidoa.

In the Commonwealth Caribbean, recommendations have been made for community health aides "with greater skills and appropriate attitudes" to be promoted to senior aides and to assist in the supervision of junior aides.

In some countries like Niger (17), supervisory visits are also an opportunity for the replenishment of drugs and other materials. These visits can also be used for collecting health information for analysis.

Developments in this area indicate that supervisors of CHWs need to be given special training for the job and to work on a full-time basis. This is to ensure that:

- supervision is regular and continuous,
- the supervisor is prepared for the task of making sure that the CHW performs his roles as defined in the job description,
- the supervisor provides the necessary technical correction and continuing education to maintain and improve the performance of the CHW.

(c) Community involvement in supervision

In Iran, Jamaica, Papua New Guinea, and the Sudan, both technical and administrative supervision is provided by the health sector, while in China, Ethiopia, Honduras, India, and Thailand, such supervision is provided jointly with the community. In these countries, the community has administrative responsibility for the CHW. In India, for instance, the community can dismiss a community health volunteer, and the volunteer cannot collect his honorarium unless the sarpanch (head) of the village panchayat issues him with a certificate of satisfactory service.

As recommended in the guiding principles put forward by the Jamaica workshop, it is necessary for both the health sector and the community to have a role in the supervision of the CHW.

The point must be made, however, that the development of a cadre of CHW or other auxiliaries as primary supervisors, does not relieve health professionals of their responsibilities in this direction.

Reorientation of health personnel

The successful implementation of CHW programmes and primary health care activities in general calls for a re-education of existing health personnel and a restructuring of the established health care delivery systems to bring these in line with the philosophy of PHC and to make them responsive to community needs and new responsibilities. The structure of the health system in many developing countries today, is geared to the health of individuals and not to the community. Sometimes, these systems are unresponsive to innovation. The training received by medical personnel emphasizes the

acquisition of clinical skills with the result that the attitudes of such personnel are not conducive to community health care, which embraces more than the care of the sick.

The reorientation of health personnel is therefore crucial in motivating health professionals to support PHC activities. This is to avoid the possibility of PHC becoming "a parallel system that is a poor relation to the existing system" (31). In this exercise, it will be necessary to "review the functions, staffing, planning, design, equipment, organization and management of health centres and district hospitals in order to prepare them for their wider function in support of primary health care" (35). Among other functions, they will have to train and supervise the CHW and guide and educate the community on health matters.

In the West Azerbaijan project in Iran, for instance, it was found that one of the problems that faced the replication of the project on a national scale was the opposition of some health directors in some parts of the country. This was probably due to the lack of preparation and inappropriate orientation of these health professionals concerning the concept of PHC and the role and functions of the CHW.

The public health nurses in Botswana, who were expected to supervise the family welfare educators, sometimes considered them simply as an "extra pair of hands" or as nurse aides because their role was misconceived. In Ethiopia, one of the problems that slowed down the implementation of the PHC programme in some parts of the country was the lack of understanding of the concept of PHC.

In Nepal, workshops and seminars designed for the reorientation of senior health personnel have become a regular feature. Health staff of all categories are being given regular in-service training at health-post, district, and national levels. During 1978/79, 77 auxiliary nurse-midwives, 34 auxiliary health workers, and 61 persons in charge of health posts from different districts were given in-service training. It is also expected that in the near future the training for the bachelor's degree in medicine will produce "community physicians".

In India, a regular programme has been instituted for the reorientation of some categories of health personnel. The course has been found to be too short and inadequate and there are plans to strengthen this programme during the 1980-85 Plan period.

A training programme for the reorientation of rural health unit staff has been put into effect in the Philippines (49). The programme is aimed at preparing such staff for their new roles and relationships with regard to the health team approach and community health. The curricula for midwifery and nursing education have been revised to make them more community-oriented and to enable graduates of midwifery and nursing institutions to work better in the scheme.

In Thailand, the training curricula for middle-level and peripheral health personnel have been revised. So have the curricula of medical schools to incorporate concepts and approaches to PHC.

In Mozambique (32), the form of medical education that existed during colonial times and "allowed medical personnel to enrich themselves at the expense of patients" has been remodelled. Medical personnel have been reorientated towards achieving the party policy of Frelimo of satisfying the basic human needs of the masses.

In Somalia, only the staff in districts where PHC is operating have received reorientation training for PHC. Recently tutors and supervisors of new PHC projects for four regions have also been included in the programme. Job descriptions in support of PHC have been only partially revised.

In Indonesia, the reorientation of health personnel is aimed at teachers of nursing schools, and teachers and instructors of sanitarians.

In China, doctors working in cities have to work in the countryside for one year out of every three to five years. This is to enable them "to grasp the importance of the task of agricultural workers" and also to "re-educate themselves by experience (39)".

The National Institute of Health Sciences (NIHS) of Sri Lanka inaugurated in February 1981 its first training programme in community health care management. The programme, which is a multidisciplinary one of two months' duration, is designed to improve the management skills of health workers responsible for the field management of the PHC programme.

The WHO Regional Committee for the Eastern Mediterranean, discussing health system support for PHC, suggested that task analyses should be undertaken for all health workers, both at the community level and at all referral levels. This would help determine what modifications were needed in the functions of health personnel and would also identify new categories of health personnel that need to be developed for PHC activities. The Sudan is reported to have initiated work along these lines. Also in Papua New Guinea, task analysis for aid-post orderlies is under way. Task analysis for nurse aides has already been completed and has resulted in changes in their training curriculum.

> Although some effort has been made by countries to reorient their health personnel regarding the role and functions of the CHW and PHC activities, there is still need for a concerted and planned attack on this problem, especially in countries where such efforts are still in their infancy. More work also needs to be done on task analyses and the restructuring of health organizations, especially at the local level, to enable them to provide the necessary back-up support for the CHW.

Community involvement in CHW programmes

Community involvement is indispensable to CHW programmes and indeed to all community development programmes. This is more so in matters of health, which are personal to the individual and yet basic to the general development of the community. When the community understands what health really means, their involvement in all matters pertaining to health becomes more sustained. As remarked by the Director-General of WHO, "Health is not a commodity that is given. It must be generated from within (31)". Communities should therefore see themselves not merely as beneficiaries of CHW programmes but as agents of their own development and copartners in the management of CHW programmes. This has become even more pressing in view of the efforts to extend the concept of health for all by the year 2000. Reference has already been made to the resources required to do this and the problems encountered by countries where community involvement in CHW programmes is either minimal or unsustained.

In Botswana, there was very little continuing relationship or dialogue between the family welfare educator and the village health committee, where it existed, because of the minimal involvement of the community in the training, selection, and job description of the family welfare educator, and there was no involvement of the community in the administrative and financial support of the family welfare educator.

In the Lardin Gabas rural health programme in Nigeria, one of the reasons given for the inactivity of some village-sponsored VHWs was the lack of support of the village health committee, which maintained overall direction of the programme (28).

The contribution of labour, material and financial resources, as obtains in countries such as Benin, Burma (43), China (23), Costa Rica (6), Iran, Nepal, Nigeria, and Viet Nam, does not constitute fully-fledged community involvement. Some countries have gone further to establish mechanisms for active local participation in CHW programmes. One important instrument that has been used by countries is the development of village health or development committees. Village health committees were established in

countries like Botswana, Liberia, Nigeria (28), and the United Republic of Cameroon (24). In Ghana (27), Guatemala (3), Sudan, and Thailand, village development or betterment committees (as they were called in Guatemala) were set up. In Nepal, health committees have been established for the health post which usually covers several villages, and for the ward.

The UNICEF/WHO joint study on National decision-making for primary health care concluded that special health committees, linked exclusively to the health service and approaching health problems in an isolated manner, may not be the most appropriate mechanism for involving communities in decision-making about the wide range of activities necessary to bring about an improvement in health (43). It is therefore important that in countries where village health committees have been set up, these should either be converted into village development committees and their scope of activities broadened to include other developmental activities or they should be linked to such village development committees.

In socialist countries like China (2?), Ethiopia, Mozambique (32), and Viet Nam, there are various community structures, such as mass organizations, residents' committees and people's councils, which are part of the political structure and are responsible for mobilizing community resources in support of CHW activities and for ensuring effective community participation. These organizations have played a major part, especially in matters dealing with prevention and health promotion. Furthermore, to give meaning to these local community organizations, there has been considerable decentralization of the administrative machinery in order to facilitate direct involvement of communities in the planning and decision-making process. The devolution of responsibilities to local community organizations, but with guidance from the centre and a political commitment to such processes, has ensured that commitment and involvement of communities have been sustained over a prolonged period.

Steps are being taken in other countries to set up the necessary institutional structures, which will make support and coordination of CHW programmes at the community level easier. In Papua New Guinea, the administrative machinery of government was decentralized in 1978 to allow for greater community participation in PHC activities. This step was taken when it was realized that such participation could be promoted much more readily through provincial mechanisms than through national mechanisms. The nineteen provinces of the country have therefore been given considerable political and financial autonomy. Every province has its "premier", "cabinet" and budget (43).

In Senegal, there have been administrative reforms that have decentralized power to the regions and local government, including a system of rural councils for groups of villages. This was meant to make community participation in developmental activities possible.

In the Sudan, the people's Local Government Act of 1971 changed the administrative set-up of the country by delegating central functions of ministries, including the Ministry of Health, to regional and provincial levels. The philosophy behind this was to give communities the "powers, authority and obligation to govern themselves".

In the United Republic of Tanzania (8), the machinery of government has been decentralized to allow communities to be involved in the planning and decision-making process.

In Bangladesh (47), to ensure community participation, the government has formed the gram sarkar (village government) which has been entrusted with responsibilities for health and family planning work in the villages.

In Thailand, tambon (commune) councils have been established to mobilize community resources and co-ordinate PHC activities, as well as to manage government funds.

Additionally, the involvement of interest groups in the planning and programming of CHW programmes is also very important. In Mali (43), where community resources were heavily drawn upon, the village health team was not only supported by the village

council but also by organizations for women, youth, and parents of schoolchildren. In Costa Rica (44), the rural health assistant worked with community health clubs, mothers' clubs, and community development groups.

Community leaders and community organizations, which are expected to mobilize support for the CHW, are often not prepared and activated for such responsibilities. It was found in Thailand that one of the major obstacles to resource mobilization at the community level was the lack of understanding among community members of the concept of PHC. In Botswana, one of the problems that the family welfare educator programme faced was the lack of information about the programme, not only among health workers as already mentioned but also among members of the community.

In Liberia, an orientation programme of three days' duration was initiated for members of the village health committee to educate them on PHC activities and the role of the VHW in the community. Initially two members of the village health committee were trained. These members, on their return, stimulated community development activities. It was therefore planned to extend this activity to all members of the village health committee.

In Costa Rica (44), community leaders were given one week's training and became promoters with the responsibility of organizing local groups and committees and also of working in community development projects. There was therefore considerable community involvement at every stage of the planning and implementation of the rural health programme.

Other strategies that have been used to inform and enlighten communities on PHC activities include:

- an on-going literacy campaign in Ethiopia (47), which is also aimed at raising the health consciousness and knowledge of the masses;
- a programme of indigenous radio broadcasts aimed at improving health education in the State of Chiapas in Mexico (7),
- education of the public about health matters by the health centre through the public loudspeaker system, as in China (23), and
- the incorporation of PHC activities into the school curriculum, as is being planned in Thailand.

An invaluable community resource that needs to be exploited to create community awareness of CHW activities and to supplement CHW efforts is schoolchildren. The school health programme in Malvani, a poor district of Bombay, has clearly demonstrated that "there is no better medium for the dissemination of health education in a community than that community's children (4)". By using schoolchildren as health leaders in the immunization programme, for example, a 90% success rate was achieved in the Malvani district, where it was previously 20%.

In Indonesia (36), action-oriented health lessons were given to schoolchildren as a means of modifying community health behaviour. Lessons involved pupils and teachers in health activities in their homes and in their neighbourhoods. "An evaluation of the teaching module on diarrhoea showed substantial improvement in the knowledge and attitudes of rural families regarding this illness." This was an indication of "how an increased outreach of PHC activities is possible through a well-designed school health programme."

> The problems that have to be borne in mind with school health programmes, however, are that school-teachers in the rural areas of developing countries are generally overworked, underpaid, and lack teaching aids and training in health matters.

Intersectoral cooperation

In view of the socioeconomic factors that affect the health development of the community, improvement in health care alone is not sufficient because no sooner is the patient cured of his disease than he returns to the "slough of poverty" that again traps him within months of his treatment (3). In order to overcome disease in the developing countries, therefore, social and economic problems will have to be tackled in a comprehensive and integrated manner.

The coordination of health and health-related activities, which is one of the important principles of primary health care, has been the most difficult to implement at all levels, but particularly at the district and local levels. Some of the constraints hindering intersectoral cooperation have been identified as "conflicting interest between administrative units and individuals; erroneous beliefs of other sectors that investments in the field of health are only consuming resources; opposition to letting another sector acquire a leadership role in matters having to do with health (conflicts in power); lack of awareness on the part of health personnel of benefits to health to be derived by action undertaken by other sectors; inadequate preparation of development agents to work together".[1] One might also add that intersectoral cooperation calls for institutional changes and arrangements that some country administrations might find it difficult to put into effect.

Experiences in countries like India, Liberia, and Mexico (7), have shown that the priority needs of the community may not be the provision of health care in the conventional sense but the provision of food and water, as in India, or the construction of a school and the provision of water supplies, as in Liberia, or the construction of a road, as in Mexico.

The imposition of activities that do not reflect the priority needs of the community may destroy the benefits of that activity. Evidence in the countries mentioned above indicates that "the type and nature of the intervention which the community initially selects is not very important. It has been repeatedly observed, in cases where a community garden, or a health post, or a water supply system are the initial actions undertaken, that as the community's awareness and interest grow, it progressively turns to other associated interventions and eventually reaches a comprehensive package. The role of the technician here is quite clear: to inform, to provide alternatives, to underline the synergetic effects and complementarity of possible interventions (2)".

Intersectoral cooperation may be facilitated by effective decentralization, which, as already referred to, also encourages community participation. This may be because "the formality of interministerial institutions is avoided; the scale is smaller and the people involved usually know each other better. Local (district) health personnel interacting with officials from other agencies (agriculture, public works, community development and education, for example), and with representatives of political structures and the general population, are often better placed to find workable responses to local problems than higher-placed officials in the national capital (43)".

In countries like Bangladesh (12), Costa Rica, Mozambique, and the United Republic of Tanzania (8), health is regarded as an integral part of overall rural development and activities are planned as such. In Costa Rica, activities are organized around the health area which is the basic unit for the health services with about 2400 people. Tanzanian rural development workers are trained to live and work with villagers and to stimulate communities to recognize their main health problems and to motivate them to take action to eradicate these. The "Mtu ni Afya" or "Man is health" project planned with the adult education directorate of the Ministry of Education was an example of

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[1] From the Technical Discussions at the Thirty-fourth World Health Assembly; see "List of unpublished documents consulted".

intersectoral cooperation in the United Republic of Tanzania. The project, besides providing reading material, gave information on symptoms and prevention of common diseases. A similar arrangement was initiated in Ethiopia where literacy programmes provided a medium for creating health awareness among communities. In Mozambique, actions necessary in the health field are an integral part of the socioeconomic development effort in the communal villages. These villages enable the benefits of collective existence and socioeconomic progress to reach the majority of the population.

The Chimaltenango project in Guatemala (3), which started as a project for curing the sick, was broadened in scope into a general community development project geared to the services that the community members needed and wanted. This was because it became obvious that the application of curative measures alone would not make community members healthy until drastic changes were made in the socioeconomic conditions of the community. The health promoters were therefore regarded as community development catalysts and worked in many other spheres, as previously mentioned.

In the Jamkhed project in India (1), health activities were coordinated with agencies involved in general community development schemes, such as agriculture and water development. Through this multisectoral approach, the project was able to identify with the community and to make community priorities its concern. Health was therefore viewed through the eyes of the community rather than through the eyes of the health professional. "This helped the project to be relevant and the project's participation in total community development elicited from the community a genuine response in favour of the health programme. Socioeconomic development not only improves health standards but also enables a community to support health programmes."

In Thailand, village development committees that coordinated intersectoral activities met once a month to consider the overall development of villages. Secondly, to promote integration among sectors and to develop an effective supervision of development activities at the local level, seminars and workshops were organized for district officers who coordinated all developmental activities in the district. At these seminars and workshops, multisectoral plans that gave expression to community needs were formulated.

In Sri Lanka, there are plans to decentralize the planning and decision-making machinery further, to below district level, to facilitate the implementation and management of programmes. Intersectoral committees are to be set up at these levels to coordinate health and other developmental activities. At the central level, a National Health Council has been established with membership from health-related ministries and under the chairmanship of the Prime Minister to give the necessary political guidance and leadership on strategies and programmes for PHC.

In Democratic Yemen (43), an intersectoral health promotion council was proposed under the chairmanship of the Minister to be responsible for planning to coordinate activities towards the achievement of health for all by the year 2000. At the local level, agricultural and fisheries cooperative workers, local authorities, political and mass organizations, and various government sectors are expected to integrate their health-related activities. There is a considerable emphasis on the developmental and community aspects of health promotion.

In the Sudan, the CHW cooperated with other workers and sought their guidance in the extension of their functions to the community. These other workers also participated in the basic training and continuing education of the CHW.

In Niger (17), extension techniques were used in health work in the Maradi project in close cooperation with the rural extension and literacy services. This strategy consisted of bringing personnel together (whatever their level) to consider themselves responsible for the needs of the total population of a community and not merely for a dispensary or a particular service. The use of this technique made it possible for the VHW and TBA to be supported not only by health personnel but also by the rural extension and literacy services.

The Simplified Medicine Programme in Venezuela (19) was implemented side by side with other related activities, which were aimed at the overall development of the rural areas. Among these activities were the rural housing programme and the rural water supply programme, which were also carried out by the Ministry of Health and Social Security and coordinated by the Regional Health Commissioner. The auxiliary in the programme thus stimulated community development activities by collaborating with the agricultural extension worker, the home demonstrator, and the teacher.

> In the move to promote intersectoral cooperation, the CHW at the peripheral level will have to collaborate with workers in other sectors or will have to be able to guide and stimulate the community to undertake activities according to their identified priority needs. The support of a village development committee and/or an efficient and effective district or local organization is important.
>
> It has been possible, in most cases, to integrate health and other sectors in pilot projects. The translation of this integration from pilot projects to the normal health system has been slow. Not many examples of cooperation between CHWs and other community workers could be discerned from the literature. The decentralization of the machinery of government and the creation of a strong local government administration are important not only to intersectoral cooperation but also to the achievement of the goal of health for all by the year 2000.

Information systems

The collection of health information is vital to the initiation, management, and evaluation of CHW programmes. It appears that the importance of this task tends to be overlooked by many countries.

For the CHW, there is need for a simplified system of data collection and processing which will make it possible for the necessary data to be collected in the field (26). This is because of his limited training, and the little time available for data gathering and transmission.

In Liberia, simple data collection forms were designed to be used by the VHWs for collecting extensive and detailed information on community members. There were also report forms for supervisors that gave information on VHWs' outputs, number of VHWs and villages visited, number of houses or villagers visited, and vital statistics. Despite the wealth of information that was collected by the VHW and that could provide measurable indicators for assessing the health status of the community, there were problems with the compilation, filing, retrieval, and analysis system because of the lack of trained personnel in this area.

In the "State-of-the-art" study (42), it was also noted that projects gathering information for evaluation purposes were not able to use this to improve operations because of "disorganization and lack of statistical expertise".

In India, although the community health volunteer was not expected to maintain any records, it was found that a large number of these volunteers maintained a variety of records, which included a stock register of medicines, details of vital events, data on chlorination of wells, and a daily diary of activities.

In China (23), there is a good reporting system and information feedback between the barefoot doctor and other levels of the health system.

In Burma, the monitoring system that was established to evaluate the primary health programme provided quantifiable information on the extent to which targets were being achieved. Considerable statistical information was also obtained on CHWs, including a computerized profile on each CHW.

In the Kavar project in Iran (33a), a simple low-cost system of data collection and analysis was introduced for the monitoring and evaluation of the project. The information collected was from baseline studies that were carried out before the deployment of the VHWs, activities reported by VHWs themselves, field visits and data collected at the health corps station. The data collected were tabulated by hand since the field sites were far from computers.

The rural health assistant and the nurse auxiliary in Costa Rica (21) went as far as keeping extensive files on the personal and socioeconomic conditions of each family. The information was then aggregated by district and region and formed the basis of a computerized national data system that pinpointed areas of deprivation needing the injection of more resources. There was also constant feedback of information between the health post and the community (15). The cost of this information system developed in Costa Rica is not reported.

Over the years, various WHO groups have considered ways of improving the collection of health information and in 1976, the WHO Regional Office for South-East Asia convened a working group to look into the problem of data collection and to provide a "framework on which health personnel in different settings can build". The essentials of the system are contained in a WHO book entitled Lay reporting of health information (29). Field trials of the recording system and the forms suggested have been conducted in Burma, India, Sri Lanka and Thailand. The conclusion reached after these trials was that the person completing the form, besides being able to read and write, should be mature enough to be able to accomplish the assigned tasks, should be acceptable to and preferably selected by the community, and should have sufficient practical experience in health services to recognize the complaints and symptoms listed. More work remains to be done in this area "to test the method in other countries and under various circumstances, so that it can be adapted, improved and refined for regular use" (26).

> The health information system has been one of the most unsatisfactory aspects of the health systems of developing countries. Either data are collected that are not used or there is no programme for systematic data collection. If data are collected they are often not processed promptly or are not presented in a form that can be used for planning and evaluation purposes. The introduction of the CHW and PHC programmes is enlarging the whole area of health information systems and since data collection is one of the important functions of the CHW, it is necessary that this is properly planned and organized if the data collected are to be meaningful, relevant, and useful to the improvement of CHW programmes and PHC activities in general.
>
> It is necessary to decide: (a) the use to which the data will be put; (b) how much time the CHW should spend on data collection; (c) whether the data to be collected should be limited to a few key issues or should be comprehensive; (d) who should analyse the data; (e) what should be the periodicity of data collection; (f) what would be a reasonable cost for the system.
>
> The adaptation of the lay-reporting system to country situations may provide answers to the above considerations. However, the importance of training personnel to analyse the data for use by planners and decision-makers needs to be emphasized.

Evaluation of CHW programmes

Evaluation procedures are not usually built into CHW programmes from the beginning. This may create problems with regard to data collection for evaluation purposes, especially since the information systems of many countries are not well developed. In the United Republic of Cameroon (24), where measurable objectives were not set at the

beginning of the VHW project, the original knowledge, attitudes, and practices (KAP) studies were found to give complex and diffuse results that did not provide enough baseline data for evaluation purposes.

It has also been observed that evaluation procedures are usually incorporated into projects where there is a considerable external input, as exemplified by the BARIDEP project in Ghana, the West Azerbaijan project in Iran and the Maryland County project in Liberia.

The evaluation of CHW programmes should be done at three levels. The first level should concern the outputs of the programme, e.g., the number of CHWs trained, number of wells chlorinated, or number of latrines built. The second level should relate to the performance of CHW activities, that is, whether the CHW is doing correctly what he has been trained to do. The third level should evaluate the impact of the CHW on the health status of the community, that is, on morbidity and mortality rates.

In the Philippines, the activities of the CHW are monitored through his accomplishments as documented in his logbook. There is also considerable reliance on community endorsement of the CHW.

In Jamaica, the activities of the community health aide are evaluated on a continuous basis through confidential reports submitted by the supervisor.

In Antigua, there is no official method of evaluation. Community health aide programmes are evaluated on the basis of observations by supervisors on the work of the community health aides and through interviews.

Bahrain has developed a comprehensive two-pronged system of evaluation, one prong of which covers PHC activities, such as nutrition, sanitation, child health, and immunization, while the other covers the "basic principles of PHC", for example, community participation, accessibility, and part of development.

In India, the community health volunteers scheme has been evaluated twice. The indicators employed included the following: the quality and content of training programmes, the performance of the volunteer in relation to envisaged functions, the time devoted to functions, the quality of services rendered, community reaction to services, logistics, and technical support.

In Thailand, many studies have been carried out by various Government and private agencies to assess the outputs and outcome of village health volunteers programmes. These studies demonstrated that the best indicators of the status of the programme were the attitudes of the villagers themselves.

In Sri Lanka, there is no formal involvement of the community in the evaluation of programmes. The concerns of the community about the inadequacy or ineffectiveness of programmes, as perceived by them, are expressed through their local representatives and acted upon by the Ministry of Health.

Nepal has carried out an extensive evaluation of VHW programmes during the mid-term review of the fifth plan and as a separate series of in-depth structured individual and group interviews. This covered various tasks, coverage of households and population, and impact on community awareness of the three most important functions of the VHW, namely, family planning, oral rehydration, and weaning foods.

An evaluation of the performance of CHWs and auxiliary midwives was carried out during the mid-term evaluation of the country health programmes in Burma. The indicators used included the number of patient contacts, the number of wells chlorinated, the number of latrines installed, the quantity of drugs distributed, the number of health education talks given, the number of babies delivered, and the number of antenatal and postnatal visits. A separate evaluation of CHWs was also done in four areas by the Health Practices Research Project Team to determine the extent of intervention by the CHW in the health matters of the community.

A three-step comprehensive evaluation process was developed in Iran by the Kavar project (38a)(50) to evaluate the impact of the VHW on the community. The first stage, known as the "acceptance study", dealt with the efforts of the VHW in the field, that is, his acceptance by the community, number of patient visits, complaints of patients, and effect of the activities of the VHW on the physician-run corps station. The second and third stages have been planned but not yet carried out. Stage 2 is designed to measure: family size, knowledge, attitudes and practices (KAP) of villagers concerning hygiene, nutrition, home sanitation, family planning, and cost of training and maintaining the VHW to provide specific services in a defined population; stage 3 will measure the VHW's impact on mortality and birth rates. In this model, the community is involved only by responding to surveys.

In Costa Rica (6)(21), the extensive and detailed records kept and the evaluations carried out have made it possible to assess the impact of the rural health assistants programme, which was an integral part of rural development. It was found, for instance, that the goal of reducing infant mortality by 50% in 10 years was almost attained in three years, clean water was available to 75% of the population, and the incidence of measles, diphtheria and poliomyelitis was cut to insignificant levels.

> The remarkable achievements of Costa Rica's health programme cannot be attributed to the rural health assistants' programme alone but to the integrated approach adopted, the involvement of the community in programmes, the allocation of adequate financial resources to community development programmes, and Government commitment to reducing inequalities in the country.
>
> The above country experiences indicate that most countries are attempting the evaluation of CHW programmes in terms of output and performance. Not much is being done in the area of impact evaluation. This is a complex issue but it is an important one because unless the impact or otherwise of CHW programmes is known, the community may reject the CHW concept. The complex nature of this issue arises from:
>
> (a) the need to undertake adequate baseline studies before programmes begin;
>
> (b) the need to develop long-term indicators according to country situations;
>
> (c) the fact that improvement of the wellbeing of the community cannot be attributed to CHW activities alone; and
>
> (d) the need to involve the community in all aspects of evaluation.

8. CONCLUDING OBSERVATIONS

In order to understand the place and the strategic importance of the CHW, one must look at the larger picture of the whole PHC approach. The Declaration of Alma-Ata (1978) was a clarion call for a social revolution in health and human wellbeing. It was revolutionary in the full sense of the term because it was meant to lead to a fundamental change in the way health systems develop and also to a change in the relationship between health care providers and consumers.

What the Declaration demanded was a total political commitment to the provision of health for all by the year 2000. This was to mean a vast reallocation of resources, a fundamental restructuring of health and health-related services, and a reorientation of health workers and communities to new roles. This strategy also demanded that the linchpin of the new system was to be the CHW.

It is obvious that large numbers of CHWs will have to be trained by countries in tasks relevant to the needs of their communities. In order to be effective, CHWs will need to be supported in an adequate and sustained manner by the joint efforts of the state and the communities they serve.

A basic requirement is the decentralization of responsibilities to formal local government structures and to the community. This means that local government structures have to be strengthened in countries where they are not well developed, since the CHW programme cannot be supported through *ad hoc* arrangements at the local level.

This review of the CHW programmes has demonstrated that there are still major problems, with which many programmes and countries are still grappling. This is true of all aspects of the functioning of the CHW. There are problems connected with their tasks and functions, selection and recruitment, training, remuneration, and career prospects, but the most serious problems concern the support services.

One of the fundamental issues is the lack of detailed national planning of CHW programmes in a way that takes cognizance of all aspects of such programmes and the changes that have to occur at all levels for them to be successful. At present, many programmes are still at the pilot stage and the findings have yet to be translated into the national planning process. This lack of planning is making intersectoral cooperation and the development of other support services difficult.

Much work still has to be done to raise the consciousness of communities (18) towards their new responsibilities in the health field. This process may be facilitated through literacy programmes, community meetings, and educational materials for children at school.

Health workers in many countries still have to understand the roles and functions of the CHW and what they can do to support him.

Although a great deal of literature on the CHW is appearing, there has not been enough sharing of experiences in a systematic way. If this can be done, it will be a major boost to the process of developing the CHW system, particularly if the experiences have stood the test of evaluation.

Areas about which information is not very satisfactory include: (a) the numbers of CHWs trained by countries; (b) attrition rates; (c) effective coverage of the CHW; (d) the cost of training, utilizing, and supporting the CHW; (e) legislative reforms that will give recognition to the CHW.

Fortunately, it can be seen from the review that most of the problems raised are being tackled successfully, at least by some countries. It is the hope of the author that the information contained in the review will be an encouragement to other countries facing similar problems and will help them to derive the maximum benefit from using the services of the CHW.

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The problems of providing primary health care coverage for the populations of the least developed countries, with their pitifully scarce resources, often appear insurmountable. Yet, if countries are to achieve the goal of health for all by the year 2000 that they have set for themselves, quick answers will have to be found to these problems. One of the most promising approaches has been the development of the concept of the community health worker, a person chosen from the community and trained to function in the community in close relationship with the health care system.

This book examines how the concept is being realized in practice in various developing countries, identifies the major problems, and indicates how the contribution of the community health worker can be made more effective in the future. It is based on a review of published literature and on a number of unpublished reports and other generally inaccessible material. It should be a valuable source of inspiration and encouragement to those responsible for health care systems in developing countries and should help them to derive the maximum benefit from the services of the community health worker.